

**LISTING OF CLAIMS:**

The following listing of claims replaces all previous versions, and listings of claims in the present application.

Please cancel claims 1 and 6 without prejudice or disclaimer.

**WHAT IS CLAIMED IS:**

1. (Canceled)
2. (Currently amended) ~~A failure detection method for a matrix sensor network as in claim 1, further comprising steps of:~~ A failure detection method for a matrix sensor network comprising:  
connecting a plurality of pressure sensitive sensors to row lines and column lines in a matrix, each sensor changing a resistance thereof according to a pressure applied thereto, characterized by:  
connecting a monitoring device to at least one of ends of two row lines and ends of two column lines to form a series circuit;  
applying a voltage to the series circuit;  
checking a voltage of the series circuit to detect failure of the matrix sensor network;  
connecting one end of the series circuit to a pull-up resistor and grounding the other end;  
applying the voltage to the series circuit through the pull-up resistor; and  
checking the voltage across the monitoring device.

3. (Currently amended) ~~A failure detection method for a matrix sensor network as in claim 1, further comprising a step of:~~ A failure detection method for a matrix sensor network comprising:

connecting a plurality of pressure sensitive sensors to row lines and column lines in a matrix, each sensor changing a resistance thereof according to a pressure applied thereto, characterized by:

connecting a monitoring device to at least one of ends of two row lines and ends of two column lines to form a series circuit;

applying a voltage to the series circuit;

checking a voltage of the series circuit to detect failure of the matrix sensor network; and

applying a same voltage to all row lines and column lines other than the two row lines and the two column lines of the series circuit.

4. (Currently amended) ~~A failure detection method for a matrix sensor network as in claim 1, A failure detection method for a matrix sensor network comprising:~~

connecting a plurality of pressure sensitive sensors to row lines and column lines in a matrix, each sensor changing a resistance thereof according to a pressure applied thereto, characterized by:

connecting a monitoring device to at least one of ends of two row lines and ends of two column lines to form a series circuit;

applying a voltage to the series circuit; and

checking a voltage of the series circuit to detect failure of the matrix sensor network;

wherein the monitoring device is one of a resistor and a diode.

5. (Currently amended) ~~A failure detection method as in claim 1, further comprising a step of:~~ A failure detection method for a matrix sensor network comprising:

connecting a plurality of pressure sensitive sensors to row lines and column lines in a matrix, each sensor changing a resistance thereof according to a pressure applied thereto, characterized by:

connecting a monitoring device to at least one of ends of two row lines and ends of two column lines to form a series circuit;

applying a voltage to the series circuit; and

checking a voltage of the series circuit to detect failure of the matrix sensor network; and

selecting in sequence at least one of two row lines and two column lines to change the series circuit to which the voltage is applied for failure detection.

6. (Canceled)

7. (Currently amended) ~~A failure detection apparatus as in claim 6, further comprising:~~ A failure detection apparatus comprising:

a matrix sensor network having row lines and column lines, and a plurality of pressure sensitive sensors connected to the row lines and the column lines in a matrix, each sensor changing electric characteristics thereof according to a pressure applied;

a monitoring device connected to ends of at least one of two row lines and two column lines to form a series circuit;

a voltage source connected to the series circuit to detect a failure based on variations in output of the monitoring device; and

a pull-up resistor connected to one end of the series circuit, wherein the other end of the series circuit is grounded.

8. (Currently amended) ~~A failure detection apparatus as in claim 6, further comprising:~~ A failure detection apparatus comprising:

a matrix sensor network having row lines and column lines, and a plurality of pressure sensitive sensors connected to the row lines and the column lines in a matrix, each sensor changing electric characteristics thereof according to a pressure applied;

a monitoring device connected to ends of at least one of two row lines and two column lines to form a series circuit;

a voltage source connected to the series circuit to detect a failure based on variations in output of the monitoring device; and

a buffer circuit for applying a same voltage to all row lines and column lines other than the two row lines and the two column lines of the series circuit.

9. (Currently amended) ~~A failure detection apparatus as in claim 6,~~ A failure detection apparatus comprising:

a matrix sensor network having row lines and column lines, and a plurality of pressure sensitive sensors connected to the row lines and the column lines in a matrix, each sensor changing electric characteristics thereof according to a pressure applied;

a monitoring device connected to ends of at least one of two row lines and two column lines to form a series circuit; and

a voltage source connected to the series circuit to detect a failure based on variations in output of the monitoring device,

wherein the monitoring device is one of a resistor and a diode.

10. (Currently amended) ~~A failure detection apparatus as in claim 6, further comprising:~~ A failure detection apparatus comprising:

a matrix sensor network having row lines and column lines, and a plurality of pressure sensitive sensors connected to the row lines and the column lines in a matrix, each sensor changing electric characteristics thereof according to a pressure applied;

a monitoring device connected to ends of at least one of two row lines and two column lines to form a series circuit;

a voltage source connected to the series circuit to detect a failure based on variations in output of the monitoring device; and

multiplexers connected to the row lines and column lines for selecting in sequence the at least one of two row lines and two column lines to change the series circuit to which the voltage source is connected for failure detection.